

ANNUAL REPORT  
OF THE  
MEDICAL OFFICER OF HEALTH  
TO THE  
COMBINED RURAL AND THE URBAN  
SANITARY AUTHORITIES  
OF THE  
CITY AND COUNTY OF HEREFORD,  
1877.

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By H. VAVASOUR SANDFORD, M.D., &c.

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TO THE URBAN SANITARY AUTHORITY OF THE  
CITY OF HEREFORD AND THE COMBINED  
RURAL SANITARY AUTHORITIES OF THE  
SAME COUNTY.

December, 31, 1877.

MR. MAYOR AND GENTLEMEN,

My Fourth Annual Report which I now present to you, will, I feel assured, give pleasure to all who may read it, and by comparing the facts herein with my former reports it will be at once made visible that what I prognosticated very briefly in the one for 1873, and more minutely in that for 1874, has come to pass. I therein stated by carrying out the Public Health Act in this County, firmly and systematically, the results would be the **SAVING OF LIFE, THE REDUCTION OF PAUPERISM, and the INCREASE OF POPULATION, by HEALTHIER BORN CHILDREN**; all this has come to pass. The saving of life is at once proved by referring to my former mortality tables with this year's. **THE REDUCTION OF PAUPERISM AND PAUPER SICKNESS** is undeniably substantiated by referring to the Local Government Board's Annual Report recently issued, wherein honourable mention is made to the effect that the County of Hereford runs third in the United Kingdom in the reduction of pauperism, and further, that this County is within one decimal fraction of running second. Huntingdon is quoted as reducing its pauperism over 13 per cent., Worcester as 8 decimal 9 per cent., and Hereford 8 decimal 8 per cent., and I do not hesitate to affirm, had my labours not been obstructed by one of the combining Sanitary Authorities refusing for nearly twelve months to continue in

combination with the other Unions, thereby losing my services, and the benefits of the Public Health Act ; I say had this not occurred, this County would have run second in such reduction.

As regards the third great benefit derived by this valuable Act—healthier born children—I have only to call your attention to the past Reports, with the tables of Infantile Mortality and Sickness, and compare them with this year's, when it will be seen throughout the whole of my district of 500 square miles, there is a steady and persistent decrease of Infantile Deaths, emanating from preventable disease and the want of pure air, pure water, and other Sanitary requirements. You will naturally ask how has all this been accomplished in the small space of less than five years ? The reply is as simple as it is true ; by perpetual systematic house to house inspection ; the removal of those matters injurious to health, and the supplying of Sanitary deficiencies where found wanting. Within the last twelve months no less than 845 Nuisances injurious to health have been brought to light by this system, and of this number 794 have been removed at very little cost, as the annexed appendices demonstrate.

I have made it a *sine qua non* to visit every Village and Town within my radius, at stated periods, whether-Sickness or Epidemic be there or not, and it is by this method I am enabled to check the Survey Sheets made by the Inspectors, and be prepared to meet any outbreak of an infectious nature. On perusing these Survey Sheets I find the greatest obstacle to contend with in Villages is the want of PURE DRINKING WATER. This deficiency is fearfully felt in some, and how the supply is to be met is the great question of the day in Sanitary legislation. It has been suggested by many eminent Engineers to secure water by means of catching the rain water from the roofs and storing it in tanks. This suggestion will hold good in houses roofed with slate, stone, or tiles, but in this county more than half the cottages are thatched with straw, which in many cases has been on the roof more than fifty years, consequently full of vermin and the excreta of birds. This

suggestion is at once negatived, as to use the water obtained from such a source would be fraught with considerable danger. The next and best suggestion made is the sinking of wells to each house to find water. My experience in this County for the last five years is that the expense of so doing, in many instances, would come to more than the cottage property is worth, and to compel the owner of such to do so would end in the owner dismissing the tenant and closing the premises. This we can ill afford in this County, cottage property being not nearly adequate to meet the demands for the agricultural labourer in very many districts. How, then, is this serious deficiency to be overcome? I would suggest to do so, let every owner of house property in their respective parishes amalgamate, and at their expense sink a good parish well properly bricked and secure from pollution, and in its place a substantial and well fitted pump accessible to every one residing in the parish, and for the benefits derived from this water compel their tenants to pay—say the small sum of one penny or twopence a week rent for the water. This may be objected to by some residing half a mile away from the pump on account of having to fetch the water so far. Let them object, but insist upon the tenant paying; they will soon only be too glad to avail themselves of the benefits of pure water. I feel convinced that if one or two substantially sunk wells and pumps were established in every Village deficient in pure water, this system will prove a sheet anchor in time of need. In fact there is no other way of meeting the difficulty. If the Village is of that magnitude as to require many of such wells, there is a clause in the Public Health Act whereby respective owners of property in a Village can jointly borrow the sum required to supply water in this or any other way to the inhabitants from the Government, for a term of 50 years, at very low interest. This, Gentlemen, is the only remedy left to meet this serious deficiency in your County. At the same time I would urge upon you where natural springs are they should be properly protected and secured from pollution. From this subject I will now solicit your attention

to another of as much importance—THE BEST MEANS TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

During my sojourn with you (now nearly five years), and in my Annual Report for the year 1876, I brought to your notice the Free Schools in this County, where, in most cases, the centres of Infection in the different parishes were situated, and by minute observation and enquiry, this theory I have proved correct. There ought to be some register kept of absent children, even if only for a couple of days—and before such absent child is admitted into the school, strict enquiry ought to be instituted as to the cause of such absentee; if from illness, a Medical Certificate ought to be produced to the Master before re-admission. In many instances this year, an absent child for a week, after suffering from Scarlet Fever, has returned to the School as if no infection were about them, and made the School-room the means to spread broad east, this and other Infectious Diseases over the parish. And as a further precaution that information ought to be at once transmitted to me by the School Master if a child is absent for more than a couple of days, to enable me to make enquiry at their home the cause of such absence. Unless something of this sort is adopted in every Public School, we shall never hear the last of Scarlet Fever and Infectious Disease in this County.

As regards parents and others withholding information of Infectious Disease being in their house, it ought to be made compulsory under a heavy penalty to give such notice as soon as ascertained to the Medical Officer of Health, it is so in common lodging houses, and works well. The Medical man, too, attending such cases ought to be placed under the same obligation, and for such information furnished, a fee be paid him by such respective Sanitary Authority, be the patient private, club, or pauper. In some large towns in the North, the Authorities have obtained bye-laws to carry out this scheme for the prevention of the spread of Infectious Disease. The results have proved most beneficial, and no doubt many lives have been saved thereby. They have also had erected an Hospital for such



disease, a building this County stands much in need of, and which I have repeatedly urged upon all your Committees' serious attention. The necessity I will again once more prove to you—you are all aware a case of Small-pox was imported into a village within two miles of a fashionable town, the inhabitants of which mostly depended on visitors for a living; this case of Small-pox ended fatally in a few days. A relation of the patient, a young man, took the infection, he was only a lodger at a house near. I had no alternative but to order his removal to the house where the man died—in fact making this one house a temporary Hospital in case of need, for other cases; fortunately by strict watch night and day, and isolation and disinfection, no other case made its appearance in the parish. To further illustrate this necessity—a man was taken ill with Malignant Scarlet Fever, and died in three days; he, his wife and child were lodgers occupying two rooms, being Irish; a wake was held over the body, which lay in the living room, twelve feet square, in this room ten living beings kept watch by the corpse all night, the stench of the room the next morning when I went in, was something awful. These are simply two cases to prove the necessity of an Hospital for Infectious Diseases in this County, I could mention many more were space given me. Leaving these three important deficiencies, the supply of water in villages, the prevention of the spread of Infectious Disease and the erection of an Hospital in the County for the reception of patients suffering therefrom, for your serious consideration I will now allude to general subjects. Of these I would mention that an Analyst has this year been appointed for the County, and as regards the appointment of one for the City, that to meet the requirements of the Act, the Mayor and Council have authorised me to act as Deputy Analyst for them, to obtain and receive samples of Food and Drugs, and on my finding such adulterated, I am empowered to at once forward them to an expert and qualified Analyst for his certificate, and on such to institute a prosecution, the Corporation agreeing to pay all expenses attached thereto.

Of the Pollution of the River Wye by the Hereford Sewage, I would also state the Mayor and Corporation have formed a Committee out of their body to enquire into and officially report upon the best means to be adopted to remedy this serious difficulty under the Rivers Pollution Act now in force.

I will only further trespass upon your time by stating that in every Union Sanitary Authority in combination in this County with the exception of one—and even in this many of the members were most zealous to support me—has the Public Health Act been carried out with firmness. The Chairmen and Members of the different Boards thoroughly appreciating the benefits derived by all classes therefrom. The fact of four out of the five Unions petitioning the Local Government Board to issue their order to continue the combination under the powers vested in them by section 286, against heavy opposition, must be convincing evidence that it is by combination alone in the appointing of one Medical Officer of Health that these benefits can be obtained, and the working of the Act honestly and impartially adhered to. In conclusion I most sincerely thank those Gentlemen of the Central Committee of Delegates for re-appointing me at an increased salary of ten per cent. for a term of years, to the responsible position I have the honour of holding in this County, after ten months of the greatest anxiety and pecuniary loss during the period of waiting the issue of the order petitioned for from the Local Government Board; also my best thanks are due to the Mayor and Corporation of this City for re-appointing me for life at an increased salary of twenty per cent., and unanimously voting me the sum of thirty pounds as a gratuity for extra services.

I have the honour to be, Mr. Mayor and Gentlemen,

Your obedient Servant,

VAVASOUR SANDFORD,

M.D., L.R.C.P., London, M.G.S., &c., &c.

The Vinery, Hereford, Dec. 31, 1877.



# APPENDIX.

## THE URBAN SANITARY AUTHORITY OF THE CITY OF HEREFORD.

*Population of City*, about 19,000.

*Houses*, about 3,381, giving about 5 people to a house.

*Area*, 2,417 acres.

*Parishes*, 6.

The house to house survey of the City is now finished.

Nuisances found to exist this year	259
Nuisances removed by owner or occupier	259
Consisting of removal of Pigs and Styces, Pigs' Wash, Filth, and Ashes	97
Stoppage of Pipes and Drains to W.C.'s	95
Smoke, Dead Animals, Offensive Poultry, &c.	67
Prosecutions under the Act	0
Structural work done	0
Lodging Houses Licensed, Inspected and White- washed twice a year	4
Bakehouses, Inspected and Whitewashed twice a year	35
Slaughter-houses, Inspected and Whitewashed twice a year	8
Do. (Public), fitted up with every Sanitary Arrange- ment, the Provision Market good and Inspected regularly twice a week, in which no improper food has been offered for sale this year.	
Disinfection of Bedding, Beds, Clothes, and Drapery carried out in all cases, at the Public Apparatus— when required.	
Births for the year 1877, Males	208
„ „ Females	178
Total	386

Of this number 24 were Illegitimate, the position in life of  
the mother being returned as “ Domestic Servant.”

Deaths for the year 1877, from all causes, 342, being 105 less than the year 1876; (for such causes of death, see Tables). Rate of Mortality for the year, 18 per 1000.

All matters in detail will be found in my four quarterly reports to this Urban Sanitary Authority, hereto attached.

Hereford, March 21th, 1877.

Mr. Mayor and Gentlemen,—I am pleased to inform you the Epidemic—Scarlet Fever—which has been affecting the inhabitants of this City for the last two years has now considerably diminished, there being only four deaths registered therefrom for this quarter to this date, against 23 registered for the quarter ending December 31st last. The mortality also from all causes is much less than the corresponding March quarter, 1876, being only 79 to this date against 113 for last March. Of this 79 thirty are below five years of age, the total only giving the very moderate death-rate of 16·8 per 1,000, the causes of which are—4 from Scarlet Fever, 1 from Whooping Cough, 4 from Measles, 11 from Phthisis, 3 from Inflammation of the Lungs, 13 from Bronchitis, 4 from Heart Disease, 2 from Injury, and the balance from Age and other natural causes.

The principal subjects to bring before your notice to-day are, first, the appointment of an Analyst for your City.

The next matter to lay before you is the obtaining a suitable building convertible for an Hospital for Infectious Diseases, the Hereford Rural Sanitary Authority having resolved to join with you in obtaining such, they agreeing to bear one-third the expenses of the whole of such an establishment.

The water supplied to your City continues to maintain its degree of excellence, showing, from analyses, hardness, 5·50 degrees; total solids, 7·5 per gallon; oxydisable organic matter, 0·50; free ammonia, *nil*; albuminoid ammonia, 0·24.

I have further to inform you that the house to house survey is now being continued by your Inspector with more regularity, he being able to devote more time thereto.

Having so lately laid before you my Annual Report for the

year 1876, touching upon every subject conducive to the health of your inhabitants, I will not trespass further upon your valuable time.

I am, Mr. Mayor and Gentlemen,

Your obedient Servant,

H. VAVASOUR SANDFORD.

June 24th, 1877.

Mr. Mayor and Gentlemen,—The rate of mortality within your District is, I am pleased to inform you, less this quarter than at any June quarter for the last four years, being only 87 from all causes. Of these 17 only were those of persons below five years of age, giving together the very moderate death rate of 18 per 1,000 only, and with gratification I further have to inform you there has not occurred a death from any Infectious Disease, or one to call your attention to. As to the prevailing illnesses they, too, are of a non-zymotic and summer type; and considering the influx of population from over 900 men and officers belonging to the Hereford Militia assembling for drill for sometime without one case calling for my supervision, I think you will admit we are most fortunate. I attribute success as to this matter entirely to the precautions issued by Capt. and Adjutant Doughty and myself.

Of general subjects calling for your consideration I must crave your attention, first, to the necessity there is for a Hospital for Infectious Diseases; 2, the appointing of an Analyst for your City; 3, the pollution of the River Wye by the sewage from your City. I have received many complaints as to this last-named subject, one especially from Mr. John Lloyd, of Huntington Court, Lessee of a portion of the Fishing, which is as follows:—

“Huntington Court, Hereford, May 21, 1877.

“Dear Sir,—I beg to inform you that on Friday last my fishermen, while netting the Wye at Fownhope, met with a larger body of sewage filth than they ever remember to have seen before. The net enclosed four yards square of ‘shoddy,’

and could not be brought to shore without breaking. By this I wish you to understand that the flow of filth into the Wye is increasing ; the consequences you will be able to understand better than I can tell you. I have called the attention of the Mayor and the Local Government Board to the subject.

“ I am, Sir,

“ Yours faithfully,

“ JOHN LLOYD.

“ To H. V. Sandford, Esq., M.D., &c., Hereford.”

4. The best means you are now compelled to adopt to prevent such under the Rivers' Pollution Act, 1875. 5. The necessity of another filtering bed at the Water Works, to enable a larger quantity of water to be supplied to the ratepayers, many of whom have complained of a scarcity lately. 6. The desirability of your making a Bye-law to the effect that the owner or occupier of every house within your City having a water-closet attached to the sewers, shall be compelled to have a ventilating shaft or pipe fixed three or four inches below the pan to the soil pipe and carried outside, and, if possible, above the roof of the house ; also that instead of the handle of the plug being fixed in the seat of the W.C., the same plug shall be pulled up by means of a crank fixed to the ceiling, and to it a cord and handle, so that the user may pull such handle down, standing in an upright position with his back to the pan, instead of as is now being done, that of drawing the handle up, with the head bending over the pan during the flushing, compelling him to inhale the most deadly gases all the time the necessary water is allowed to flush and wash out the pan. And further, that every drain from the inside of a house, coming from kitchen, washhouse, pantry, whatsoever and wheresoever situated, being attached directly to the main sewer, shall instead be cut off and disconnected, and that over the end of the portion of pipe attached to the sewer a “ D ” trap shall be placed of sufficient capacity to resist the gases escaping from the main sewer. This “ D ” trap ought to be placed in the yard

or garden outside the house, close to the foundation wall, and to it all pipes from the said washhouse, kitchen, pantry, slop-stone, &c., ought to be brought to the "D" trap and made to empty into the grid over such trap outside the house—thus entirely cutting off and not leaving the slightest chance of a single germ of sewer poison entering the dwelling-house. This plan I have found to be the only effectual means of preventing these invisible but living germs from entering, while to its other recommendations may be added its simplicity and cheapness. I believe, Mr. Mayor and Gentlemen, there is not a house in this City that has not either a small yard or garden in which this "D" trap might be placed, and to make all clean and tidy a small perforated wood or zinc box can be placed over the trap and mouths of the pipes, which can be made to open when required to clean out the grid and trap, and in addition any disinfecting or deodorising material can be placed in the trap without the gases emanating therefrom entering the dwelling. I have tried the plan now for four years with the greatest success, and it has been recognised by the leading Engineers and Medical Officers of Health, assembled in London a short time ago, as the only known simple and available means (at present) of preventing deadly germs from sewers entering a dwelling. This plan is just as applicable to pipes attached to cesspools as it is to sewers.

I have further to inform you the water supplied to the inhabitants of your City continues to maintain its excellence and purity, showing by analysis:—Hardness, 5.50 degrees; total solids per gallon, 7 grains; oxydisable organic matter, 0.270 of a grain per gallon; free ammonia, simply a shade; albumenoid ammonia, traces only; colour, bright and clear.

I have received a letter or two stating that the water taken from the writers' taps revealed living organisms therein. On making inquiry I found that they had not drawn a drop out of the tap for 34 hours. Lying thus in the tap the water naturally became bad. To these parties I would just say the remedy is at hand. If they will allow the tap to run for half a minute the water will become clear and sweet.



The hot weather being now here I must ask you to issue orders as to stray dogs, &c. The house to house survey is being continued to my satisfaction.

I am, Mr. Mayor and Gentlemen,

Your obedient servant,

H. VAVASOUR SANDFORD.

Hereford, September 29th, 1877.

Mr. Mayor and Gentlemen,—My quarterly report ending to-day will afford you gratification when I state that the number of deaths from all causes is now reduced to 73—16 of which are under five years of age—comparing this 73 against the June quarter, which was 87, and the March quarter 98, the quarter ending Christmas 114, the September 1876 quarter 115, the June 1876 quarter 105, the March 1876 quarter 113, the Christmas 1875 quarter 97. It will be at once made apparent to all that there is a steady and marked decrease in the rate of mortality for the last three years, and should this continue at the same rate it is now doing up to Christmas next a smaller death rate will be recorded to you by me than any corresponding twelve months for many years past, and this is not all the benefits derived from the Public Health Act having been carried out and put in force by you. The infantile mortality and those under five years of age is now reduced to less than one per 1,000 of your population for this quarter. By referring back to my past annual reports, you will observe this infantile mortality is steadily and firmly on the decrease. Also I would ask you to compare this 16 with the quarter for June last, 17; March last, 34; Christmas last, 47; September 7, 46. It is only by the comparisons and figures that the benefits derived from this new Public Health Act can be appreciated and made visible to all throughout the Kingdom. To the causes of the deaths too for this quarter I would also draw your attention. With the exception of one from Measles, three from Scarlet Fever, two from Diarrhoea, one from Pyæmia, four from Phthisis or Consumption, seven from Bronchitis, Pneumonia, and Pleurisy,



six from Heart Disease, and two from Injury, and the rest from a Non-zymotic type. Now, compare the number of deaths from Diarrhoea—two only—for the year ending to-day, in this City with any other Urban district with a corresponding 20,000 population. This infantile cause of death with us is an exception rather than a rule as with other towns; and to pure water, pure air, and proper feeding do I attribute the absence of deaths therefrom. You must bear in mind these two deaths represent a whole 12 months. I unhesitatingly affirm there is no town in England with a population of 20,000 that can show so small an infantile death rate as ours from Enteric Diarrhoea or Typhoid Fever.

Of general subjects to again call your attention to, is the purity of the water of the Wye as supplied by your Water Works. It maintains the same degrees of excellence I have for the last four years reported to you, being by analysis—hardness, six degrees; total solids, 6.40 grains per gallon, oxydisable organic matter 0.110 per gallon; albumenoid ammonia, traces only; free ammonia, *nil*. Colour slightly tinted from peat cutting.

I would further solicit your considering the desirability of an Analyst being appointed for your City without further delay.

Also I have been advised to draw your attention to the increased number of cases from Hydrophobia in different parts of the country, and I strongly urge upon you issuing an order to destroy all unclaimed dogs within your City.

I am, Mr. Mayor and Gentlemen,

Your obedient servant,

VAVASOUR SANDFORD, M.D., &c.

Hereford, Dec. 31, 1877.

Mr. Mayor and Gentlemen,—I have only to refer you to the death-rate recorded in my Report to you this time last year and compare it with the amount of mortality for this quarter,

when it will be made visible that we are 34 less deaths this quarter, being only 80 against 114 for the quarter ending December 31, 1876, and what will be more gratifying to all is that the infantile mortality for the before-mentioned periods is 18 only this quarter against 47.

The causes of death registered for the 80 are attributable to four from Scarlet Fever, three from Croup, three from Diarrhœa, eight from Phthisis, one only from Pneumonia, nine from Bronchitis, seven from Heart Disease, the balance from old age and other non-zymotic disease.

Of prevailing illnesses I have only to mention Scarlet Fever. This disease has made its appearance in three different parts or localities of the City rather severely. I trust, however, now with precautions and active measures adopted its progress is now arrested.

In two instances I can trace the cause of its again appearing—simply the taking out of put-away winter clothes which were exposed to the germs of this fever last winter, and which did not undergo any disinfection before being stowed away. I would also mention a case of mild Enteric Fever which cropped up at Broomy-hill. This case I am of opinion can be traced to pent-up sewage gas, (not generated in the main sewers), but passing into them from some of its tributaries, the fall of which was so imperfect that not long ago such branches were blocked up and the sewage, &c. (in a fearfully offensive state), regurgitated into the basement of the houses a foot deep. In these houses fever has been, off and on, for some years.

I would strongly recommend that to remedy these serious evils the main sewer be sunk at least six feet deeper than it is at present to enable a good fall being obtained from these very unhealthy houses. I have laid this suggestion before your Surveyor, and he is of opinion that the main sewer is *not* near deep enough to drain this and other property at their basements in this neighbourhood.

Of general subjects I have to call your attention to is the appointing of an Analyst for your City. I believe this question

will be sufficiently met by the resolution passed at the last meeting of the Sanitary Committee, to the effect that I be empowered to procure and receive samples of food and drugs, and if necessary and the same be found adulterated to any extent to forward such samples to a legally qualified Analyst to obtain a quantitative and qualitative analysis, and thereon institute legal proceedings, the expense of the same to be borne by the Sanitary Authority.

As regards the purity and excellence of the water supplied by the Water Works it maintains its high standard, and now that I have got it laid on at my residence (proving an inestimable value to my family) I am enabled by daily examination and speedy analysis to detect any variation in its constituents. Analysis this day :—Hardness, 6 degrees ; solids, 6'8 grains per gall., including  $\frac{1}{4}$  grain vegetable organic matter ; free ammonia, *nil* ; albumenoid ammonia, traces only ; colour bright and free from odour.

The second house to house Sanitary survey is being continued by your Inspector to my satisfaction.

As I shall shortly present you with my printed Annual Report for the past year in detail, I will not further trouble you than to thank the Chairman, T. Cam, Esq., and the Sanitary Committee for their able assistance in carrying out my responsible duties.

I am, Mr. Mayor and Gentlemen,

Your obedient Servant,

VAVASOUR SANDFORD, M.D.

THE LEDBURY RURAL SANITARY AUTHORITY.

*Area : 48,783 Acres, consisting of 22 Parishes.*

*Population*: About 13,104.

*Houses:* About 2,904, the whole of which have been surveyed a second time.

Aggregate number of people to each house, about 4

Births for the year 1877	...	...	...	...	319
Deaths	"	"	...	...	211
Mortality	"	"	...	...	16·1 per 1000
Nuisances removed this year	...	...	...	...	215
By written notice	...	...	...	...	85
By verbal	"	...	...	...	130
Consisting of overcrowding	...	...	...	...	9
New privies	...	...	...	...	22
New drainage to different properties	...	...	...	...	40
Drains repaired in villages	...	...	...	...	30
Pig-styes removed	...	...	...	...	18
Cess-pools cleaned out and repaired	...	...	...	...	70
Houses cleaned	...	...	...	...	20
„ whitewashed, &c.	...	...	...	...	4
„ disinfected	...	...	...	...	4
Sets of bed linen, &c., &c., burned, being infected with Small-pox	...	...	...	...	2—215

No legal proceedings have been resorted to to enforce the above.

Structural work done and being carried out by this Sanitary Authority: Making new sewers to town of Ledbury, and supplying a portion of the inhabitants with water—by means of water works.

In this district everything is working most beneficially for the public under the Health Act, 1875, and with the exception of two cases of Small-pox breaking out at Colwall, causing one death, and an outbreak of Diphtheria in the Parish of Little

Marcle, causing two deaths, there is nothing of note to draw attention.

The Small-pox cases at Colwall emanated first from a man coming some 70 miles away, where it was very prevalent; he came home infected and died. The second case was traced unquestionably to the first, the infected clothes and linen of the dead man were placed in an out-house waiting disinfection, and in this place a hen was laying eggs. This second case a young man went into the out-house at night to get some of the eggs, and so got infected from the linen, &c., laying there; he recovered. Having no place to send infectious cases to, I got the mother of the man who died to receive the second case in her house and to nurse him. There being no other inmate, this she did, and by strict isolation, disinfection, and burning all bed linen, clothes, &c., there did not occur another case—although the neighbourhood was thickly populated—and within a couple of miles of Malvern. I cannot speak too highly of the members of this Sanitary Authority, who gave me unlimited power to do whatever I thought best, and to spare no expense. A watch was placed over the house night and day, and no one allowed to go in or out until the recovery of the patient and thorough disinfection had been adopted, and burning everything likely to hold infection. These measures were crowned with success, and I only go into detail to prove how easily this fearful disease can be controlled, if timely measures are adopted. I would also mention a Special Vaccination Station was opened in the parish at certain days for the public.

As regards the outbreak of Diphtheria at Little Marcle, there can be little doubt, this disease was imported from a distance by a child attending the Public Schools in this parish: and the place being low lying, having many stagnant pools, ditches and wells with very inferior water, coupled with badly constructed houses, the germs of this Infectious Disease found a hot-bed peculiarly adapted to bring forth over twenty severe and mild cases.

## THE WEOBLEY RURAL SANITARY AUTHORITY.

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*Area* : 49,959 Acres, consisting of 28 Parishes.

*Population* : About 9,031.

*Houses* : About 1,149, the whole of which are being surveyed a second time.

*Aggregate number of people to each house*, 4 and a half.

Births, 223.

Deaths, 113.

Mortality, 12.50 per 1,000.

Number of nuisances injurious to health found to exist on second survey in the Weobley District, 95 ; of which 81 have been removed, consisting of—

Overcrowding	7
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Whitewashed and otherwise disinfected	31
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Drains repaired and put in order, Cess-pools removed and built afresh, Foul Ditches cleaned, &c., &c.	41
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Dilwyn District, on second survey, 54 ; of which 29 have been removed, consisting of—

Overcrowding	2
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Whitewashing and Disinfecting	10
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Drains repaired, Cess-pools built, and done away with where too near Wells, Ditches cleaned out, &c., &c.	17
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I know of no district that has given so much encouragement to a Medical Officer of Health as this. I have only to refer you to my Annual Reports for the last four years, and compare them with this, when it will be seen that the Mortality from all causes is now reduced to the minimum standard of Rural Districts in the United Kingdom, notwithstanding an outbreak of Scarlet Fever in two Parishes ; and to the Chairman and Sanitary Committee the greatest credit is due for their unceasing zeal to assist me in my duties.



## THE HEREFORD RURAL SANITARY AUTHORITY.

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*Area* : 70,974 Acres, consisting of 42 Parishes.

*Population*, about 14,800.

*Houses*, 4,705, which are being surveyed a second time.

*Aggreagate number of people to each house*, about 4.

*Number of Nuisances found to exist*, 95 ; of this number the following have been removed or made good :—

Privy accommodation, with water-tight Cess-pools	...	..	43
Pig-styes badly situated removed	...	...	6
Ventilation and other Sanitary arrangement supplied to Cottages	...	...	26
Overcrowding done away with	...	...	2
Defective Drainage do.	...	..	14
Adjourned cases	...	...	2
Unexpired notices...	...	...	2
			95

Two Public Wells have also been cleaned, covered over, and a Pump placelin each, to supply a Village with Water, at cost of this Sanitary Authority.

Legal proceedings have been resorted to in two cases to compel parties to comply with notices served.

Births, 491.

Deaths, 285.

Rate of Mortality for the year, 19 per 1000.

Owing to the large number of 122 people dying over 60 years of age this year has been the cause of keeping the death-rate so high in this district ; at the same time, it is satisfactory to record we are 4 per 1,000 less this year than last, and the Infantile deaths, and those under five years of age, only amount to 42, against 70 for last year.

In this district everything is working most satisfactorily under an able and energetic Chairman and Vice-Chairman, supported by a good Sanitary Committee ; and at their hands have I received every assistance to aid me in carrying out the Public Health Act.

## THE LEOMINSTER RURAL SANITARY AUTHORITY.

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*Area* : 64,416 Aeres, consisting of 25 Parishes.

*Population*, about 9,600.

*Houses*, about 2,180, the whole of which are being surveyed a second time.

*Aggregate number of people to each house*, about four and a half.

*Number of Nuisances injurious to health*, removed, 127, consisting of—

Dwellings repaired	...	...	...	...	...	...	...	...	27
Privies erected, &c.	...	...	...	...	...	...	...	...	23
Pig-styes removed	...	..	...	...	...	...	...	..	17
New Drains and Water Courses	...	...	...	...	...	...	...	...	43
Pumps, Draw Wells, &c., repaired	...	...	...	...	...	...	...	...	17

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127

Births for the year 1877 ... .. 410

Deaths for the year 1877 ... .. 146

Rate of Mortality ... .. 15·2 per 1,000

In this Sanitary District much good has been derived from the Public Health Act being carried out with firmness by the Members of this Board. The great question at present before them is the supply of Water for the people residing in villages. Many Public Wells and Springs have been secured from pollution.

All matters in detail have been brought before this Sanitary Authority in my quarterly written reports to them. I need only draw attention to the low rate of Mortality, the lessening of Pauper sickness, and the few deaths arising from Zymotic Disease this year, compared with my former Annual Reports, to prove the inestimable benefits obtained by all classes from this Act.

## THE BROMYARD RURAL SANITARY AUTHORITY.

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I am unable to furnish more than a Three Months' Report upon this Sanitary Authority, in consequence of having only been re-appointed permanently since September last.

*Area:* 61,659 Acres.

*Population,* 11,934.

*Houses,* about 2,554, the whole of which have been surveyed.

*Aggregate number of people to each house,* about four and a fraction.

Deaths for Quarter ending December, 31, 1877, 53, giving a death-rate of about 17· per 1,000 for the year—the causes of which, see Table hereto attached. This rate of Mortality is slightly on the increase, comparing it with my former Annual Reports.

As the question of Sewering the Town of Bromyard is now entirely out of my hands, and rests in those of this Authority and the Local Government Board, I refrain from making any comment thereon.

Table of Mortality and Sickness in the Urban Sanitary District of the City of Hereford, for the twelve calendar months ending December 31st, 1877.

NAME OF DISEASE.		Deaths (among all classes) registered as having occurred in the District or Division.		Sickness and Deaths among Paupers.						
		Total Deaths registered as above.		Sickness and Deaths among out-door paupers; and among any paupers who belong to the District or Division, and have been removed into the Workhouse on account of illness; whether the Workhouse be within or without the District or Division.						
		Aged under 5.	Aged 5 and upwards.	NEW CASES.		DEATHS.				
		II.	III.	IV.	V.	VI.	VII.			
I.										
Small Pox ..	..	5	1	13	9	1	..			
Measles ..	..	3	8	4	5	1	1			
Scarlatina ..	..	..	..	..	1	..	..			
Diphtheria ..	..	3	..	3	..	..	..			
Croup (not "spasmodic") ..	..	1	1	11	..	..	..			
Whooping-Cough ..	..	..	..	..	..	..	..			
"Continued" Fevers { Typhus Enteric Of other, or doubtful sorts		..	..	..	..	..	..			
		4	1	20	12	1	..			
Diarrhoea and Dysentery ..	..	..	..	..	..	..	..			
Cholera ..	..	..	..	..	2	..	..			
Rheumatic Fever ..	..	..	..	..	3	..	..			
Erysipelas ..	..	..	..	..	..	..	..			
Pyæmia ..	..	..	1	..	..	..	..			
Puerperal Fever ..	..	..	..	..	..	..	..			
AGUE ..	..	1	33	..	9	..	3			
PTIUISIS ..	..	12	45	22	27	7	10			
BROUCHITIS, PNEUMONIA, AND PLEURISY	..	..	28	9	14	6	6			
HEART-DISEASE ..	..	50	9	2	6	1	12			
INJURIES ..	..	..	130	46	197	14	..			
DISEASES NOT NAMED ABOVE	..	..	..	..	..	..	..			
Total ..	..	85	257	121	285	25	32			

TABLE of DEATHS during the year 1877 in the Urban Sanitary District of the City of Hereford, classified according to Diseases and Ages, and showing also the Population of such, and the Births therein during the year.

Names of Localities.	POPULATION AT ALL AGES.			MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.										MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS IN PERSONS UNDER FIVE YEARS OF AGE.																		
	Census 1871.	Estimated to middle of 1876.	Registered Births	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.										MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS IN PERSONS UNDER FIVE YEARS OF AGE.																		
				At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.	Smallpox	Measles.	Scarlatina	Diphtheria	Croup (not "spasmodic").	Whooping Cough	Continued fevers.				Diarrhoea and Dysentery	Cholera	Rheumatic fever	Krysipelas	Pyæmia	Pæral fever	Ague	Phtisis	Bronchitis, Pneumonia, and Pleurisy	Heart Disease	Injuries	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
Hereford																																
Urban Sanitary Authority....	18347	19000	386	342	31	54	23	18	90	126	undr 5 supws	..	5	3	..	3	1	..	..	..	4	..	..	..	..	..	..	..	1	12	28	9
Totals.....	18347	19000	386	342	31	54	23	18	90	126	undr 5 supws	..	5	3	..	3	1	..	..	..	4	..	..	..	..	..	..	..	1	12	28	9

Table of Mortality and Sickness in the Rural Sanitary District of the Ledbury Union, for the twelve calendar months ending December 31st, 1877.

NAME OF DISEASE.	Deaths (among all classes) registered as having occurred in the District or Division.		Sickness and Deaths among Paupers.			
	Total Deaths registered as above.		Sickness and Deaths among out-door paupers; and among any paupers who belong to the District or Division, and have been removed into the Workhouse on account of illness; whether the Workhouse be within or without the District or Division.			
	Aged under 5.	Aged 5 and upwards.	NEW CASES. Aged under 5.	Aged 5 and upwards.	DEATHS. Aged under 5.	Aged 5 and upwards.
I.	II.	III.	IV.	V.	VI.	VII.
Small Pox .. .. .	..	1	13	2	..	1
Measles .. .. .	..	..	11	3	..	..
Scarlatina .. .. .	..	..	8	4	..	..
Diphtheria .. .. .	..	2	..	6	..	2
Croup (not "spasmodic") .. .. .	..	..	..	..	..	..
Whooping-Cough .. .. .	1	..	4	5	..	..
"Typhus Enteric { of other, or doubtful sorts	..	..	..	..	..	..
"Continued" Fevers .. .. .	..	2	2	22	..	..
Diarrhoea and Dysentery .. .. .	2	..	22	..	..	..
Cholera .. .. .	..	..	..	..	..	..
Rheumatic Fever .. .. .	1	..	4	11	1	..
Erysipelas .. .. .	..	..	..	4	..	..
Pyæmia .. .. .	..	..	..	1	..	..
Puerperal Fever .. .. .	..	..	..	2	..	..
AGUE .. .. .	..	..	..	..	..	..
PTHTHISIS .. .. .	..	20	2	14	..	4
BRONCHITIS, PNEUMONIA, AND PLEURISY	1	17	37	85	3	2
HEART-DISEASE .. .. .	..	23	..	12	..	4
INJURIES .. .. .	..	8	4	9	..	1
DISEASES NOT NAMED ABOVE	37	96	80	469	8	20
Total .. .. .	42	169	187	655	12	34





Table of Mortality and Sickness in the Rural Sanitary District of the Weobley Union, for the twelve calendar months ending December 31st, 1877.

NAME OF DISEASE.	Deaths (among all classes) registered as having occurred in the District or Division.		Sickness and Deaths among Paupers.			
	Total Deaths registered as above.		Sickness and Deaths among out-door paupers; and among any paupers who belong to the District or Division, and have been removed into the Workhouse on account of illness; whether the Workhouse be within or without the District or Division.			
	Aged under 5.	Aged 5 and upwards.	NEW CASES. Aged under 5.	DEATHS. Aged 5 and upwards.		
I.	II.	III.	IV.	V.	VI.	VII.
Small Pox .. .. .	..	..	10	15	..	..
Measles .. .. .	..	..	30	26	1	1
Scarlatina .. .. .	1	4	..	..	..	..
Diphtheria .. .. .	..	..	2	..	..	..
Croup (not "spasmodic") ..	..	..	2	1	..	..
Whooping-Cough .. .. .	..	..	..	..	..	..
{ Typhus	..	..	..	..	..	..
{ Enteric	..	..	..	..	..	..
{ Of other, or doubtful	..	..	..	..	..	..
"Continued" Fevers .. .. .	..	1	5	6	..	..
Diarrhoea and Dysentery ..	..	2	..	2	..	..
Cholera .. .. .	..	..	..	..	..	..
Rheumatic Fever .. .. .	..	..	..	2	..	..
Erysipelas .. .. .	..	..	..	..	..	..
Pyæmia .. .. .	..	..	..	..	..	..
Puerperal Fever .. .. .	..	..	..	..	..	..
AGUE .. .. .	..	11	..	7	..	3
PTITIS .. .. .	..	16	25	30	1	8
BRONCHITIS, PNEUMONIA, AND PLEURISY	2	20	2	9	..	4
HEART-DISEASE .. .. .	..	4	2	7	..	2
INJURIES .. .. .	18	34	40	196	4	7
DISEASES NOT NAMED ABOVE	..	..	..	..	..	..
Total .. .. .	21	92	116	301	6	25

TABLE of DEATHS during the year 1877 in the Rural Sanitary District of the Weobley Union, classified according to Diseases and Ages, and showing also the Population of such, and the Births therein during the year.

Names of Localities.	POPULATION AT ALL AGES.			MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.												MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS IN PERSONS UNDER FIVE YEARS OF AGE.																		
	Census 1871.	Estimated to middle of 1876.	Registered Births	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.												MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS IN PERSONS UNDER FIVE YEARS OF AGE.																		
				At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.	12	13	14	15	16	17	18	Continued fevers.				Diarrhoea and Dysentery	Cholera	Rheumatic fever	Erysipelas	Pyæmia	Puerperal fever	Ague	Phthisis	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease	Injuries		
1	2	3	4	5	6	7	8	9	10	11								Typhus	Enteric	Typhoid	Other or Doubtful	22	23	24	25	26	27	28	29	30	31	32		
Weobly Union Rural Sanitary District....	9031	9131	223	113	17	4	7	7	24	50	undr 5 6upws	..	..	..	1	..	..	..	..	..	..	1	..	2	..	..	..	..	..	2	16	20	..	4
Totals.....	9031	9131	223	113	17	4	7	7	24	50	undr 5 6upws	..	..	..	1	..	..	..	..	..	..	1	..	2	..	..	..	..	..	2	16	20	..	4

Table of Mortality and Sickness in the Rural Sanitary District of the Hereford Union, for the twelve calendar months ending December 31st, 1877.

NAME OF DISEASE.	Deaths (among all classes) registered as having occurred in the District or Division.		Sickness and Deaths among Paupers.			
	Total Deaths registered as above.		Sickness and Deaths among out-door paupers; and among any paupers who belong to the District or Division, and have been removed into the Workhouse on account of illness; whether the Workhouse be within or without the District or Division.			
	Aged under 5.	Aged 5 and upwards.	NEW CASES. Aged under 5.	Aged 5 and upwards.	DEATHS. Aged under 5.	Aged 5 and upwards.
I.	II.	III.	IV.	V.	VI.	VII.
Small Pox .. .. .	1	..	16	8	..	..
Measles .. .. .	7	4	6	6	1	1
Scarlatina .. .. .	3	..	3	..	..	..
Diphtheria .. .. .	..	..	7	1	..	..
Croup (not "spasmodic") ..	..	..	..	..	..	..
Whooping-Cough .. .. .	..	..	..	1	..	..
.. Typhus .. .. .	..	1	..	..	..	..
.. Enteric .. .. .	..	..	..	..	..	..
"Continued" Fevers { Of other, or doubtful sorts .. .. .	..	1	21	16	..	..
Diarrhoea and Dysentery .. .. .	..	..	..	..	..	..
Cholera .. .. .	..	..	..	4	..	..
Rheumatic Fever .. .. .	..	1	..	5	..	..
Erysipelas .. .. .	1	..	..	..	..	..
Pyæmia .. .. .	..	2	..	..	..	..
Puerperal Fever .. .. .	..	..	..	..	..	..
AGUE .. .. .	..	26	..	7	..	6
.. .. .	1	41	52	75	6	14
BRONCHITIS, PNEUMONIA, AND PLEURISY	14	29	..	15	..	5
HEART-DISEASE .. .. .	1	7	2	11	..	2
INJURIES .. .. .	1	105	91	265	7	13
DISEASES NOT NAMED ABOVE ..	42	..	..	..	..	..
Total .. .. .	70	217	197	413	14	46

TABLE of DEATHS during the year 1877 in the Rural Sanitary District of the Hereford Union, classified according to Diseases and Ages, and showing also the Population of such, and the Births therein during the year.

Names of Localities.	POPULATION AT ALL AGES.			MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.												MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS IN PERSONS UNDER FIVE YEARS OF AGE.																			
	Census 1871.	Estimated to middle of 1876	Registered Births	At all ages.												Continued fevers.																			
				Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards	Smallpox	Measles.	Scarlatina	Diphtheria	Croup (not "spasmodic").	Whooping Cough	Typhus	Enteric or Typhoid	Other or Doubtful	Diarrhoea and Dysentery	Cholera	Rheumatic fever	Erysipelas	Pyæmia	Puerperal fever	Ague	Phtisists	Bronchitis, Pneumonia, and Pleurisy	Heart Disease	Injuries						
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
Hertford Union Rural Sanitary District....		14671	14800	491	285	47	23	15	17	61	122 undr 5 6upws	..	..	3	7	3	..	..	..	1	1	..	..	..	1	1	..	2	..	1	14	41	29	1	7
Totals.....		14671	14800	491	285	47	23	15	17	61	122 undr 5 6upws	..	..	3	7	3	..	..	..	1	1	..	..	..	1	1	..	9	..	1	14	41	29	1	7





TABLE of DEATHS during the year 1877 in the Rural Sanitary District of the Leominster Union, classified according to Diseases and Ages, and showing also the Population of such, and the Births therein during the year.

Names of Localities.	POPULATION AT ALL AGES.		MORTALITY FROM ALL CAUSES, AT SURJOINED AGES.										MORTALITY FROM SURJOINED CAUSES, DISTINGUISHING DEATHS IN PERSONS UNDER FIVE YEARS OF AGE.																											
	Consus 1871.	Estimated to middle of 1876.	Registered Births										At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.	Smallpox	Measles.	Scarlatina	Diphtheria	Croup (not "spasmodic")	Whooping Cough	Continued fevers.				Diarrhea and Dysentery	Cholera	Rheumatic fever	Erysipelas	Pyæmia	Puerperal fever	Ague	Phthisis	Bronchitis, Pneumonia, and Pleurisy	Heart Disease	Injuries
			19	20	21	Enteric or Typhoid	Other or Doubtful																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32									
Leominster Union Rural Sanitary Authority....	9504	9600	410	146	25	15	3	3	33	67	undr 5 supws	..	..	3	1	..	1	..	..	..	1	..	..	..	..	..	..	..	6	22	12	4								
Totals.....	9504	9600	410	146	25	15	3	3	33	67	undr 5 supws	..	..	3	1	..	1	..	..	..	1	..	..	..	..	..	..	..	6	22	12	4								



Table of Mortality and Sickness in the Rural Sanitary District of the Bromyard Union, for the three calendar months ending December 31st, 1877.

NAME OF DISEASE.	Deaths (among all classes) registered as having occurred in the District or Division.		Sickness and Deaths among Paupers.			
	Total Deaths registered as above.		Sickness and Deaths among out-door paupers; and among any paupers who belong to the District or Division, and have been removed into the Workhouse on account of illness; whether the Workhouse be within or without the District or Division.			
	Aged under 5.	Aged 5 and upwards.	NEW CASES. Aged under 5.	Aged 5 and upwards.	DEATHS. Aged under 5.	Aged 5 and upwards.
I.	II.	III.	IV.	V.	VI.	VII.
Small Pox .. .. .	1	..	4	2	..	..
Measles .. .. .	1	..	2	..	..	..
Scarlatina .. .. .	..	..	..	..	..	..
Diphtheria .. .. .	..	..	..	..	..	..
Croup (not "spasmodic") ..	..	..	2	..	..	..
Whooping-Cough .. ..	..	..	..	..	..	..
"Continued" Fevers { Typhus Enteric of other, or doubtful sorts	1	1	4	7	1	..
Diarrhoea and Dysentery ..	..	..	..	..	..	..
Cholera .. .. .	..	..	..	..	..	..
Rheumatic Fever .. .. .	..	1	..	..	..	..
Erysipelas .. .. .	..	..	..	..	..	..
Pycnia .. .. .	..	..	..	..	..	..
Puerperal Fever .. .. .	..	..	..	..	..	..
AGUE .. .. .	..	2	..	2	..	1
PHthisis .. .. .	1	10	7	9	2	4
BRONCHITIS, PNEUMONIA, AND PLEURISY	..	3	..	4	..	..
HEART-DISEASE .. .. .	..	1	1	2	..	1
INJURIES .. .. .	..	..	12	81	2	10
DISEASES NOT NAMED ABOVE	11	20	..	..	..	..
Total .. .. .	15	38	32	107	5	16



# SANITARY HINTS.

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PURE DRINKING WATER.—Avoid, as far as you can, every water which can even be *suspected* of contamination with the filth from sewers, house drains, privies, cesspools, and the like. See that cisterns and water butts are clean, and especially that the overflow pipes does not open direct drain any drain. Water should be clear, colourless, and without smell. Water can only be really tested by a difficult and careful chemical analysis. Drinking-water is the better for being filtered. A costless filter may be thus made :— Take a flower-pot and plug the hole, not too tightly, with a piece of sponge ; add a layer of powdered animal charcoal about one inch thick, then the same quantity of clean sand, and on that some coarse gravel. The charcoal should be occasionally re-baked or washed with Condyl's Fluid ; in epidemics of typhoid fever or cholera, the water should be boiled before filtration.

DRAINS, CLOSETS, &c.—Flush and, if possible, scrub and cleanse once daily with plenty of water, containing some disinfectant, as crude sulphate of iron, chloride of zinc, carbolic acid, or Cooper's Patent Salts. See that the traps are well charged with water, that they do not allow bad smells to escape into the house, and that the main house drain is ventilated by the rain water pipe, by charcoal air filters, or otherwise.

ASH AND PRIVY PITS.—Cover, so as to keep them dry, well drained, thoroughly spread over with ashes or dry earth. frequently emptied, sprinkle with a disinfecting powder—

(McDougall's or Cooper's)—and be careful that no slops are thrown in. Decaying animal and vegetable refuse are sources of danger, and should be buried or dug into the earth away from houses. Remove all pigs, poultry, and rabbits, to some distance from living rooms.

VENTILATION.—Keep rooms and passages sweet by opening doors and windows for admission of air. Fires greatly promote ventilation. Over-crowding is exceedingly dangerous. Whenever possible, 500 cubic feet of air breathing space should be allowed to each individual in any sitting-room, bedroom, or work-room. Gas lights contaminate the air very rapidly. Pure air is less dependent on cubic space than on efficient ventilation, which may be secured by the following simple and economical method:—Raise the lower sash of the window two or three inches, and fill in the opening underneath the bottom rail with a piece of wood; this leaves a corresponding space between the meeting rails in the middle of the window, through which a current of air enters and is directed towards the ceiling, whence it should escape by a valvular opening. The fewer persons and things in a sick-room the better. Beds should be freely exposed to the air during the day, and soiled linen should not be kept waiting for washing in unventilated closets.

CLOTHING, FOOD, &c.—While warmth is kept up, transpiration should be free; in summer and autumn a broad flannel bandage should be worn round the abdomen, and the linen should be constantly changed. The food should be plain, fresh, wholesome, and sufficient; avoiding intemperance in both eating and drinking. Bodily weakness favours cholera, typhus, typhoid, and other fever,—therefore, avoid exhaustion, over-fatigue, and fear as much as possible. Milk, rice, meat, soups, potatoes, beans, pea-meal, bacon, entire wheaten bread and cheese are the cheapest nourishing articles of food. One of the most frequent causes of the early death



of young children is improper feeding. The proper food of children is breast milk. When the mother and child are both healthy no other food is required for the first six months. When the child is first born no other food is required, and the practice of giving gruel, butter, honey, and castor oil to new-born babes is prejudicial to their health. When the mother has a deficiency of milk, cow's milk is the best substitute. It should be given with a third of warm water and a little sugar. For the first six weeks the child should be suckled every two hours in the day and every three or four hours at night. Gradually as it gets older the intervals of feeding may be prolonged. Children should not be fed to keep them quiet but at regular intervals. Mothers should never fall asleep when suckling their babes, as this is one of the most frequent causes of suffocation in bed. A child should not be weaned suddenly, but by degrees, and ought not to have the breast after the ninth month. When the child has cut its front teeth it may have some light food, such as bread, baked finely ground entire wheaten flour, or milk biscuits added to its milk, or "Liebig's Food;" and once a day, meat broth or beef tea, with bread or biscuits soaked in it; or the yolk of an egg, lightly boiled; when it is a year and a half old, some fine chopped meat—but milk should form the principal part of its food. Solid meat and potatoes, fat pork and fish, which form the food of grown-up people, should on no account be given to children.

**THE SICK ROOM.**—Keep sweet by a small fire and plentiful supply of fresh air, as above described. Remove bed-curtains, window-hangings, and carpets. Sweep rooms daily, and let the floor be frequently rubbed with a damp cloth or dry rubbed, and when necessary chloride of lime or acetic acid sprinkled from time to time on the floor. Keep within reach of the patient a basin charged with disinfectant for him to spit into; and have close at hand a tub or pail of diluted

disinfecting fluid, into which should be immediately thrown any article of clothing removed from the patient. Instead of a pocket handkerchief, use small pieces of rag, to be immediately burnt after use. A piece of mackintosh sheeting placed beneath the sheet or blanket of a bed prevents discharge soaking through. A tea-cup full of green copperas solution, 2lbs. to a gallon, put into the night pan before it is used by the patient renders the discharge harmless. Matters discharged from the body should be received in a vessel containing active disinfectants, as about half a pint of either of the following solutions, namely :—Of 2lbs. of sulphate of iron in a gallon of water ; one quart of chloride of zinc to three quarts of water ; four fluid ounces of carbolic acid (Calvert's No. 5) to a gallon of water. Glasses, cups, and other utensils of the sick room should be cleansed before they are used by other persons. Hang, outside door of room, a sheet or old counterpane, and keep it moistened with some disinfecting solution.

**INFECTED CLOTHING AND BEDDING.**—Soiled linen, bedding, and such woollen articles as admit of washing, on being removed from the patient should be plunged into boiling water before they are taken from the room, and, in addition, for an hour or two, into a tub of solution of four fluid ounces of carbolic acid (Calvert's No. 5) to a gallon of water ; after this they can be boiled and washed. Cloth clothes, mattresses, beds, pillows, &c. (in the absence of a proper public disinfecting establishment, which should be so constructed that its temperature can be well regulated and maintained at from 240 dg. to 250 dg. Fahr. for four or five hours), should be disinfected by smoking with brimstone, exposure in the open air, to the sun, if possible, or if raining in front of a large fire. Washing and lime-whiting of premises should be attended to periodically.

**THE PATIENT**—Separate the sick person from the healthy

as soon as possible. In cases of scarlet fever, on the seventh and eighth day, anoint the surface of the body twice a day with camphorated lard or palm oil, or wash with diluted Condyl's Liquid. When the patient is sufficiently strong let him take a warm bath, and afterwards be well washed with carbolic acid-soap and water. During a week or ten days from this time he may be kept apart, repeating every two or three days the disinfecting ablutions; after which time he can, with safety, mix again with his family. Scarlet Fever and Small Pox seldom spread beyond the sick-room when separation and disinfection have been properly used. Whenever children have sore throats or an eruption on the skin, they should be separated from the rest of the family until they have had medical advice or those symptoms have disappeared. Measles and Whooping-cough are contagious, and cases should be more carefully isolated and nursed than is usually done. In the event of death early burial is very desirable. Powdered charcoal, 2 lbs, Cooper's Patent Salts, or good Carbolate Powder, or sawdust nearly saturated with a solution of chloride or sulphate of zinc, placed in the coffin retards decomposition and putrefaction, or takes away offensive smells by absorbing noxious gases.

**NURSES AND ATTENDANTS.**—Woollen dresses are to be avoided, and preference given to washing materials. Prevent contact, as much as possible, between attendants and inmates of the house. After handling the sick or things connected with them, let the nurse be careful immediately to wash her hands in diluted Condyl's liquid, or with carbolic acid-soap.

**DISINFECTANTS.**—For *Nuisance Prevention* as detected by the nose test, those most generally used are Chloride of Lime, Cooper's Salts, Condyl's Fluid, Burnett's Liquid, Chloralum, Carbolic Acid, and its compounds. Chloride of Lime and Chlorine require care and experience in management; when

used too freely in inhabited rooms, they give rise to irritation of the lungs and air passages. Burnet's Fluid and Carbolic Acid are most efficacious but are poisonous, and the latter possesses a very strong smell, which to many persons is extremely offensive. Ten pounds of sulphate of iron, five gallons of water, and half a pint of common carbolic acid form a good and cheap disinfectant for drain. Iodine, volatilized on a heated surface, is an excellent disinfectant, but is expensive. Carbolic Acid, Chlorozone, or Condy's Liquid improve the air when diffused by means of a large brush, a scent spray, or the hydronette syringe with rose. For *Infection Prevention*,—should be thorough—not diluted, applied in considerable strength,—while the room is occupied by the living it is impossible to use volatile or aerial disinfectants in such quantity as to be of real service. When the room is vacated, to disinfect thoroughly, close the windows, stop up the chimney and every aperture and outlet from the room, and use sulphur in the proportion of  $1\frac{1}{2}$  oz. for every 100 cubic feet of space. The sulphur may be safely burnt in a shallow pipkin or coarse earthenware saucer containing some live coals or coke; the saucer should be supported on a pair of tongs laid across a pail of water, so that in case of accident the burning sulphur may fall into the water and do no injury. The room should be closed for twelve hours—then the wall papers should be removed, stripped off, and burnt; the walls, ceiling, floor, painted parts of the room and articles of furniture washed with solution of carbolic acid, and the ceilings and walls lime-washed; the room should be unoccupied and freely open to the external air for a fortnight, if possible, for plenty of fresh air is the truest, best, and cheapest disinfectant.

VACCINATION —Every child should be vaccinated before the third month; if delayed beyond that period, it may increase the irritation of teething. Skin rashes are often erroneously said to be caused by vaccination. All persons should be re-

vaccinated after eight years of age,—and when Small Pox prevails in a family or neighbourhood.

Clergymen, medical practitioners, Scripture readers, and other persons interested in sanitary reform living in the district, are invited to inform the Medical Officer of Health, and the Sanitary Inspectors, of any nuisances which they discover in their neighbourhood—such communications to be considered strictly confidential. Every ratepayer has a right of complaint, and it is only by such co-operation that Sanitary Officers have a power of remedying nuisances and of checking the ravages of epidemic disease.

